

The diagram illustrates a magnetic field control system for a motor, organized into three main functional blocks: 1 (Motor/Driver), 2 (Control Unit), and 3 (Feedback/Measurement).

Block 1 (Motor/Driver): This block contains the motor and its driver. It includes a motor (11) and a driver (13) which is controlled by a current reference (14) and a feedback signal (15). The driver (13) outputs a current (17) to the motor (11). The motor (11) is controlled by a current reference (18) and a feedback signal (19). The motor (11) is also controlled by a current reference (20) and a feedback signal (21). The motor (11) is also controlled by a current reference (22) and a feedback signal (23). The motor (11) is also controlled by a current reference (24) and a feedback signal (25). The motor (11) is also controlled by a current reference (26) and a feedback signal (27).

Block 2 (Control Unit): This block contains the control logic. It includes a current reference (14) and a feedback signal (15). The current reference (14) is compared with the feedback signal (15) to generate an error signal (16). The error signal (16) is then processed by a controller (17) to generate a current reference (18). The current reference (18) is then compared with the feedback signal (19) to generate an error signal (20). The error signal (20) is then processed by a controller (21) to generate a current reference (22). The current reference (22) is then compared with the feedback signal (23) to generate an error signal (24). The error signal (24) is then processed by a controller (25) to generate a current reference (26). The current reference (26) is then compared with the feedback signal (27) to generate an error signal (28). The error signal (28) is then processed by a controller (29) to generate a current reference (30).

Block 3 (Feedback/Measurement): This block contains the feedback and measurement components. It includes a current sensor (1) and a position sensor (2). The current sensor (1) measures the current (17) and outputs a feedback signal (15). The position sensor (2) measures the position (3) and outputs a feedback signal (21). The feedback signal (15) is compared with the current reference (14) to generate an error signal (16). The feedback signal (21) is compared with the current reference (22) to generate an error signal (24). The error signal (16) is then processed by a controller (17) to generate a current reference (18). The error signal (24) is then processed by a controller (25) to generate a current reference (26). The current reference (18) is then compared with the feedback signal (19) to generate an error signal (20). The error signal (20) is then processed by a controller (21) to generate a current reference (22). The current reference (22) is then compared with the feedback signal (23) to generate an error signal (24). The error signal (24) is then processed by a controller (25) to generate a current reference (26). The current reference (26) is then compared with the feedback signal (27) to generate an error signal (28). The error signal (28) is then processed by a controller (29) to generate a current reference (30).

Key signals and components shown in the diagram include:

- Currents:** ΦL_c , ΦI_c , ΦL_M , ΦI_M , $\Delta \Phi I$, $\Delta \Phi L$.
- Control Signals:** CVS_c , PC_c .
- Feedback Signals:** $\Delta \Phi I$, $\Delta \Phi L$.
- Components:** 11, 12a, 12b, 12c, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30.

Fig. 2

